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EXAMINER

MOORE, WILLIAM W

ART UNIT PAPER NUMBER

1656

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,196

Applicant(s)

KATZ ET AL.

Examiner

William W. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Restriction

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

1. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:2, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
2. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:3, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
3. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:4, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
4. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:5, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
5. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:6, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
6. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:7, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
7. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:8, to

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- vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
8. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:11, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 9. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:12, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 10. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:13, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 11. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:14, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 12. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:15, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 13. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:17, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
 14. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:18, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.

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15. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:19, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
16. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:20, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
17. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:21, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
18. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:22, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
19. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the integral chmGI polypeptide having the amino acid sequence set forth in SEQ ID NO:23, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
20. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the integral chmGII polypeptide having the amino acid sequence set forth in SEQ ID NO:24, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
21. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the integral chmGIII polypeptide having the amino acid sequence set forth in SEQ ID NO:25, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
22. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the integral chmGIV polypeptide having the amino acid sequence set forth in

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- SEQ ID NO:26, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
23. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the integral chmGV polypeptide having the amino acid sequence set forth in SEQ ID NO:27, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
24. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:28, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
25. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:29, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
26. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:30, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
27. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:31, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
28. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:32, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
29. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:33, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.

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30. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:34, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
31. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:35, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
32. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:36, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
33. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:37, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
34. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:38, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
35. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:39, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
36. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:40, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
37. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID

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- NO:41, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.22.
38. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:42, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
39. Claims 1, 6-9, and 26-30, drawn in part to, and claims 2, 3, and 19-24 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the polypeptide having the amino acid sequence set forth in SEQ ID NO:43, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
40. Claims 1, 4-9, and 26, drawn in part to a polynucleotide encoding the P450 hydrolase having the amino acid sequence set forth in SEQ ID NO:9, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
41. Claims 1, 4-9, and 26, drawn in part to a polynucleotide encoding the P450 hydrolase having the amino acid sequence set forth in SEQ ID NO:10, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
42. Claims 1, 4-9, and 26, drawn in part to a polynucleotide encoding the P450 hydrolase having the amino acid sequence set forth in SEQ ID NO:16, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.2.
43. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase loading domain encoded by positions 23823-25046 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
44. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyltransferase loading domain encoded by positions 25353-26396 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and

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host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

45. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein loading domain encoded by positions 26499-26756 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
46. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 1 domain encoded by positions 26808-28079 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
47. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 1 domain encoded by positions 28386-29432 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
48. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 1 domain encoded by positions 30099-30794 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
49. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein domain encoded by positions 30966-31220 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide

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- synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
50. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 2 domain encoded by positions 31296-32567 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
51. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 2 domain encoded by positions 32889-33932 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
52. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the dehydrogenase 2 domain encoded by positions 33975-34574 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
53. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 2 domain encoded by positions 35472-26257 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
54. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein 2 domain encoded by positions 36402-36659 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated

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chalconic polyketide synthase domain, an additional chalconic polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

55. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 3 domain encoded by positions 37143-38414 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalconic polyketide synthase domain, an additional chalconic polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
56. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 3 domain encoded by positions 38724-39896 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalconic polyketide synthase domain, an additional chalconic polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
57. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the dehydrogenase 3 domain encoded by positions 39903-40544 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalconic polyketide synthase domain, an additional chalconic polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
58. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 3 domain encoded by positions 41442-42281 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalconic polyketide synthase domain, an additional chalconic polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
59. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein 3 domain encoded by positions 42411-42668 of SEQ ID

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NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

60. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 4 domain encoded by positions 43139-44422 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
61. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 4 domain encoded by positions 44750-45796 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
62. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 4 domain encoded by positions 46436-47248 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
63. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein 4 domain encoded by positions 47318-47575 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
64. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding

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the ketosynthase 5 domain encoded by positions 47651-48925 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

65. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 5 domain encoded by positions 49226-50272 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
66. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the dehydrogenase 5 domain encoded by positions 50309-51001 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
67. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the enoylreductase 5 domain encoded by positions 52085-52957 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
68. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 5 domain encoded by positions 52925-53728 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

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69. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 6 domain encoded by positions 54544-55818 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
70. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 6 domain encoded by positions 56122-57168 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
71. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketoreductase 6 domain encoded by positions 57844-58707 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
72. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein 6 domain encoded by positions 58753-59019 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
73. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the ketosynthase 7 domain encoded by positions 59489-60778 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and

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host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.

74. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl transferase 7 domain encoded by positions 61112-62209 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
75. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the acyl carrier protein 7 domain encoded by positions 62276-62533 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
76. Claims 1, 6-9, and 26-30, drawn in part to, and claims 10-17 drawn more particularly to, a polynucleotide comprising a nucleic acid sequence encoding the thioesterase domain encoded by positions 62549-63436 of SEQ ID NO:1 and further comprising a coding sequence specifying an inactivated chalcomycin polyketide synthase domain, an additional chalcomycin polyketide synthase domain, or a domain of different polyketide synthase, to vectors and host cells comprising same, and to methods of use thereof in producing a polyketide, classified in class 536, subclass 23.1.
77. Claim 18, drawn to a generic polypeptide, classified in Group 530, subclass 350.
78. Claim 25, drawn to numerous species of polynucleotide probes or primers comprising at least 200 contiguous nucleotides identical to various polypeptide-encoding regions within SEQ ID NO:1, classified in class 536, subclass 24.32.

The inventions are distinct, each from the other, because of the following reasons:

Inventions of Groups 1-75 are unrelated, one to another. Each encoded product that defines the coding capacity of a polynucleotide of Groups 1-75 has a primary structure that is distinct from the structures of other disclosed chalcomycin polyketide synthase polypeptides, requiring separate searches for the diverse polynucleotides in

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commercial and USPTO nucleic acid sequence databases and in the publications of the prior art. Restriction is proper where each polynucleotide differs in structure from a polynucleotide encoding another disclosed different, modified, or chimeric chalcomycin polyketide synthase polypeptide or polyketide modifying enzyme where each search is a separate burden on the resources of the USPTO where the distinct polynucleotide sequences are not disclosed to be related, one to the other.

Inventions of Groups 1-75 are related to Group 76 as process of making and product made. The inventions are distinct if either or both of the following can be shown: ((1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product as claimed can be used in a materially different process of using the product, that of producing an encoded polyketide synthase polypeptide, a modified polyketide synthase or a chimeric polyketide synthase by recombinant expression in the host cell.

Inventions of Groups 1-75 are unrelated to an invention of Group 77. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are not disclosed to be capable of use together and have different modes of operation and different effects where a polynucleotide of Groups 1-75 need not comprise any particular 200-nucleotide segment of the sequence of SEQ ID NO:1 of Group 77. The polynucleotides of Groups 1-75 are thus patentably distinct from a polynucleotide of Group 77. Because these inventions are distinct for the reasons given above and the search required for any polynucleotide of Groups 1-75 differs significantly in its parameters from the search required a polynucleotide of Group 77, restriction for examination purposes as indicated

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is proper. A search of Groups 1-75 together with Group 77 would be undue considering the entirely distinct search parameters needed and the extensive prior art that must be evaluated. Thus, the inventions of Groups 1-75 are appropriately restricted from an invention of Group 77 on the basis of being both independent or distinct and presenting an undue search on the Examiner if they were to be searched together.

Requirement for Restriction as to Species

This application contains claims directed to the following patentably distinct species of the claimed invention:

Group 77, claim 25, is generic to hundreds of patentably distinct polynucleotide species. Applicant is required under 35 U.S.C. § 121 to further elect a single disclosed polynucleotide species for prosecution on the merits if Group 77 is elected for prosecution pursuant to the requirement above, to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 25 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103(a) of the other invention.

Election

A telephone call was made to Mr. Randolph T. Apple on 2 March 2006 to request an oral election to the above restriction requirement, but did not result in an election being made. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee withdrawn required under 37 CFR 1.17(i).

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is 571.272.0933 and whose FAX number is 571.273.0933. The examiner can normally be reached Monday through Friday between 9:00AM and 5:30PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisory Primary Examiner, Dr. Kathleen Kerr, can be reached at 571.272.0931. The official FAX number for all communications for the organization where this application or proceeding is assigned is 571.273.8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571.272.1600.

William W. Moore
2 March 2006


NASHAAT T. NASHED PHD.
PRIMARY EXAMINER